facility area networks

workshop purpose

26 February 2004
Champaign, IL

cfom project

consolidated facility object model

- life-cycle facility information model
- web-service confederation(s)
- demonstration of potential

- proof-of-concept demonstration in O&M arena

problem

- maintenance tasks have high proportion “information seeking” and “data reporting” operations.
- non-work time decreases “wrench-time” and decreases work quality

hypothesis

- providing reliable, real-time access to as-built facility information, repair histories, schematics, and repair manuals will decrease “data seeking” operations.
- providing robust wireless networks will eliminate duplicative “data reporting” operations.
- having “right-data” at “right-time” will improve quality of work accomplished.

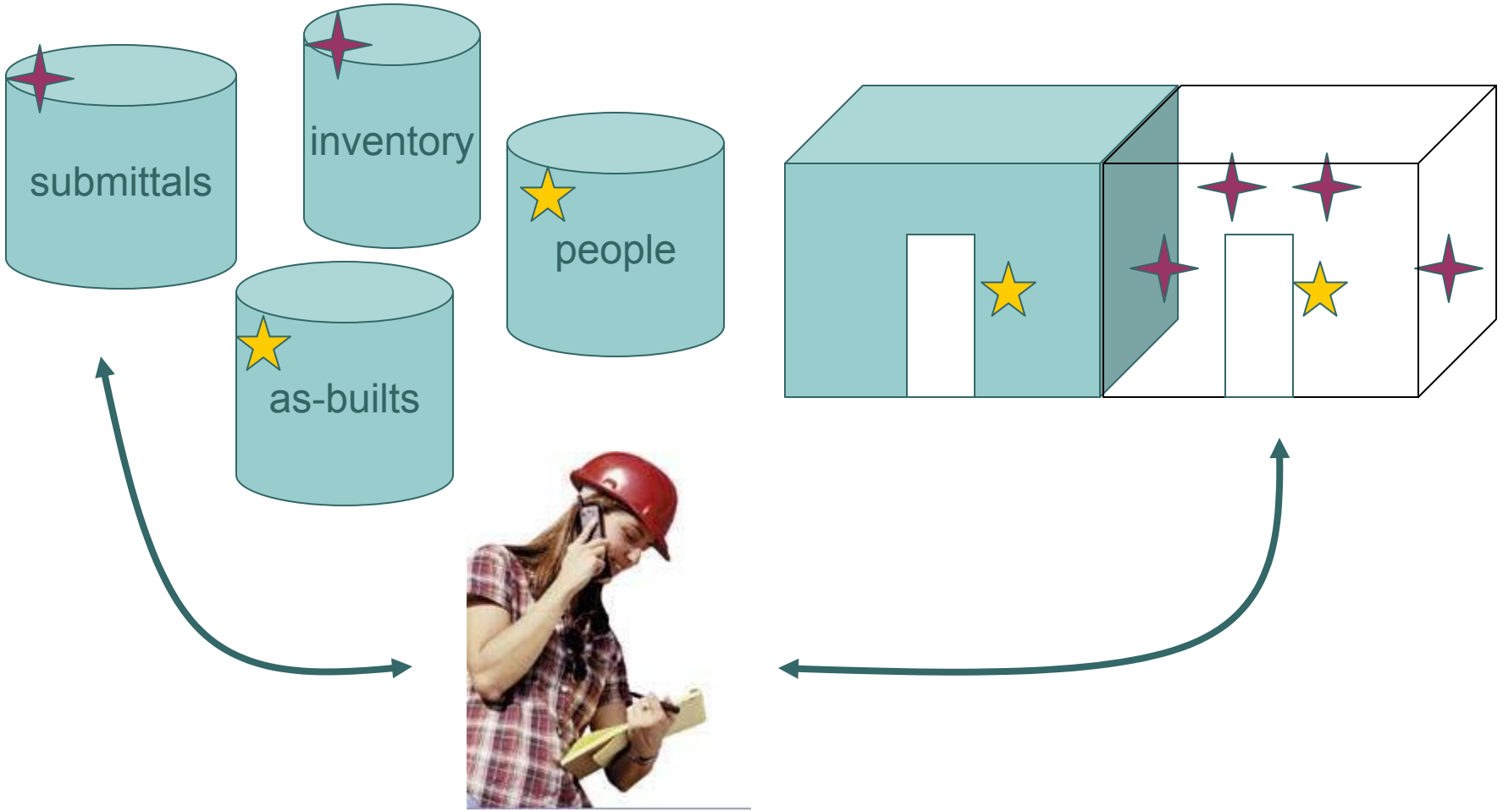
approach

Facility Area Networks, or FANs, bring together the power of distributed data services and context-aware computing devices to dramatically decrease the cost and improve the quality of facility operations.

approach

- web service federations
- ubiquitous wireless networks
- appropriate device forms
- position locating technology
- contextual information retrieval

results expected



direct results…

- decrease in cost
  - right work done first time by right person
  - reduce return time for parts/tools
  - reduce time to document work orders in field
- quality standardization
  - manufacturers instructions available
  - operators shared best-practice available
  - access to remote experts available
  - Installation specific best-practices

indirect result…

- reduce inventory control cost
  - operators produce real-time inventory
  - walk-through/drive-by inventory
  - locate moved equipment without hunting

measurable results…

- decrease o&m cost
  - increase in “wrench-time” per day
  - decrease in late work order reporting
  - decrease in return repair visits
  - decrease travel cost, double-up on jobs/site
- reduce inventory cost
  - decrease cost of finding lost/moved items
  - reduction in cost of record keeping
  - improved quality of inventory data
  - small tool tracking

technology gaps

- advanced computer representations of as-built facility data/knowledge
- context-sensitive, user-aware, intelligent information retrieval/collaboration/archiving
- infrastructure for secure transmission over distributed computing networks
- pervasive networks of automated and semi-automated agents
- location-aware user interfaces
- accessing existing facility data
- defining standards

objective of workshop

- identify technology gaps
- calibrate fan against industry/research efforts
- Identify existing o&m information infrastructure needs